

EVALUATION OF THE PARTNERSHIP FOR INTERVENTION AND
EMPOWERMENT (PIE) PROJECT

by

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ABSTRACT

HIV/AIDS has become a major public health concern in the United States over the past 35 years and when paired with substance abuse, specifically intravenous drug use, the co-occurrence can have a significant impact on the risk of HIV infection. Health issues related to HIV and substance abuse do not exclusively affect one specific demographic; however, evidence shows that the concurrence and spread are more prevalent in the economically and socially deprived, mainly low-income black communities, than in areas with higher incomes and a lower minority population. Programs, such as the PATF in Allegheny County, developed the Partnership for Intervention and Empowerment (PIE) for populations at risk for the co-occurrence of HIV infections and substance abuse. The purpose of this paper is to evaluate the strengths and weaknesses of PIE during the first year of implementation into the target communities. Conclusions from this paper were drawn to determine that incorporating “best practice” factors into the study design of behavioral interventions would greatly enhance the applicability of an intervention program in specific communities. The public health significance of this thesis is to identify program planning strategies that would provide information and/or access to appropriate clinical care for individuals who test positive for HIV/AIDS. Developing strategies to counteract the disparity in access to

care is paramount in addressing the plight of black populations living in low-income housing.

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1.0. INTRODUCTION

HIV, the human immunodeficiency virus, is a retrovirus (RNA-based virus) that causes acquired immunodeficiency syndrome (AIDS) by attacking the immune system and its components. The virus has been linked to over 500,000 deaths in the U.S. since its initial diagnosis in the mid- to late-1970s with 50,000 new infections each year (CDC, 2008b). Within the past 20 years, HIV/AIDS has shifted from a perceived “gay white men disease” to an epidemic health crisis plaguing low-income black populations among others. HIV/AIDS has become a major public health concern in the United States over the past 35 years (Herek, 1993).

Additionally, in the United States, an estimated 22.3 million persons over the age of 12 were classified with substance abuse or dependence, representing 9% of the US population (Department of Health and Human Services, 2007). Data relating HIV and substance abuse have pointed to intravenous drug use as the second leading behavioral cause of HIV infection for black men and women.

Although men who have sex with men still represent three quarters of HIV/AIDS diagnoses among adolescents and adults (53%), incidence data has shown greater impact of HIV among black populations than any other racial or ethnic group (CDC, 2008a; CDC, 2008b). Health issues related to HIV and substance abuse do not exclusively affect one specific demographic; however, evidence shows that the concurrence and spread are more prevalent in the economically and socially deprived, mainly low-income black communities, than in areas with higher incomes and a lower minority population (Ruiz,

2000; Sikkema, 2000). While intervention programs for high-incidence HIV populations remain an essential public health service, the program addressed in this paper focuses primarily on black low-income populations.

In response to the growing need for testing, information and support services to address AIDS hysteria and co-morbidity factors of the mid 1980s (Korcok, 1985), the Pittsburgh AIDS Task Force (PATF) was founded in 1985. Today, after more than 20 years, the location of PATF has transitioned from a small dim corridor tucked away in a remote sector of Wilksburg, PA, to a cheerful and spacious outreach center located on Pennsylvania Avenue in the East Liberty section of Pittsburgh, PA. Since its founding in 1985, PATF has been the leading community-based AIDS service organization in southwestern Pennsylvania, empowering citizens through educational and social programs such as women's consortiums, Sisters Informing Sisters on Topics about AIDS (SISTA), outreach programs for gay, lesbian, bisexual and transgender groups and most recently the Partnership for Intervention and Empowerment project. The PATF serves an average of 400 active clients, 95% of whom live below the federal poverty level, with 38% having been diagnosed with AIDS and 62% carrying HIV. Each year, the PATF tests an average of 900 people for HIV, provides over 4000 hours of case management services, and welcomes over 2000 visits to their well-stocked food pantry (Force, 2005).

In the United States, the co-proliferation of substance abuse and HIV infection is placing many individuals at risk. To address this, collaborative efforts of Persad Inc., the University of Pittsburgh Graduate School of Public Health, Center for Health Equity Research and Promotion (CHERP), Substance Abuse and Mental Health Services Administration (SAMHSA), the Allegheny County Health Department (ACHD), the

Housing Authority of the City of Pittsburgh (HACP), and the Allegheny County Jail, with the PATF founded the Partnership for Intervention and Empowerment (PIE) project.

The PIE project was formed as a response to the rise of these two problems in low-income housing developments. The intent of PIE is to strengthen partnerships within subsidized public housing communities in Allegheny County, Pennsylvania, by providing intervention sessions specific to HIV/AIDS and substance abuse prevention. The purpose of implementing these sessions is to educate communities in order to reduce the incidence of these two issues (Team, 2007). The PIE project is a community-wide approach which actively engages residents as critical stakeholders during each stage of program implementation. After a review of literature on the social determinants of HIV and substance abuse and how intervention programs are using “best practice” measures to address these issues, this paper will evaluate the strengths and weaknesses of the implementation of Year One of the PIE project in three target communities in Allegheny County.

2.0 LITERATURE REVIEW

A review of the literature was conducted by identifying research materials relevant to interventions for HIV/AIDS and substance abuse through PubMed and the University of Pittsburgh Health and Science Library Systems (HSLS). Of the 300+ articles mentioning HIV and substance abuse, the identified articles used for this literature review were determined based on measurable outcomes of HIV program

effectiveness and comprehensive explanation of behavior program study design. PubMed and HSLs search words/phrases included “HIV/’best practices’,” “drug use/effective community interventions,” “substance abuse/HIV/black low-income housing” and “black populations/HIV programs/housing developments.” Reviews of publications from Persad Center Inc., and Pittsburgh AIDS Task Force (by permission only) were also conducted. This literature review will address the co-morbidity rates of HIV and substance abuse in the United States as well as addressing literature about the social determinants of these issues in low income housing communities. The social determinants included are social structure, social stigmas and stereotypes, and limited access to healthcare education.

2.1 SOCIAL DETERMINANTS OF HIV AND SUBSTANCE ABUSE IN LOW INCOME HOUSING COMMUNITIES

Contracting HIV and abuse of controlled substances are considered by the CDC as major public health concerns (CDC, 2005b; CDC, 2008b). While the transmission of HIV is affected by patterns of sexual behavior and certain drug-related practices, there is evidence that HIV transmission is the outcome of a combination of biologically, behaviorally and socially produced factors (Heffernan, 2002). Factors introduced in this section, such as socioeconomic status and structure, pervasive social stigma associated with race and poverty and limited access to health care education, have been directly

linked to an increase in exposure to HIV and/or substance abuse (Page-Shafer, 2002; Ruiz, 2000; Sikkema, 2000).

2.1.1 Socioeconomic status and structure

Socioeconomic issues and other social and structural influences affect the rates of HIV infection across all races. However, a strong correlation exists between higher AIDS incidence and lower income, and with 24% of blacks living in poverty (compared to 8% whites and 10% Asians), these associations may increase the risk factors for HIV infection in this population (CDC, 2005a). A history of social inequality in black populations, both culturally and geographically, has contributed to their current social environment, which places them as the most disadvantaged members of the society (Thomas, 2000). This disproportionate societal structure for black Americans has been linked to an increase in drug use and causally associated with HIV outbreaks (Rhodes, 2005).

The HIV epidemic has been considered by scholars as a “synergism of plagues” experienced by economically and socially marginalized populations, mainly black populations (Rhodes, 2005). According to the 2007 Current Population Survey (Bureau, 2007), blacks have the highest percentage (24% of all people, 23% of families) of all racial categories below the poverty line in the United States, which has remained statistically unchanged for over a decade. Even though blacks only make up 13% of the US population, between June 1997 and December 2000 they accounted for almost half (49%) of estimated HIV/AIDS diagnoses (CDC, 2008a).

Socioeconomic inequalities have been found to reduce social cohesion and integration, and such disintegration has been linked to drug use, injecting drug use and multiple sexual encounters (Rhodes, 2005). Studies have explored the importance of social capital, measured by economic and cultural resources available to a social network, in building trust and mold decision making skills (Putnam, 1995). Reduced social capital and networks are common in low-income areas and have been associated with conditions of drug use, injecting drug use, multiple sexual encounters and violence (Sterk-Elifson, 1992). Therefore, the social structure and environmental context surrounding an individual can influence risky behavior regarding exposure to HIV and drug use. Black populations that have poor access to social capital and live in low income areas are more likely to be exposed to HIV risk due social and cultural factors in their environment (Heffernan, 2002).

HIV/AIDS disproportionately affects black women, especially those living in low-income and/or inner city areas. The incidence rate of HIV infection for black females was nearly 15 times the rate for white females (CDC, 2006). In 2002, AIDS was listed as the leading cause of death for black women between the ages of 25 and 34, and ranked among the leading causes of death for all black women (Beard, 2005). The CDC Incidence Surveillance System report (1999-2000) supports findings that high-risk heterosexual contact was the predominant mode of HIV transmission for black females, followed by intravenous drug use (CDC, 2000). Statistics from the *International Journal for Equity in Health* state that black women account for 60% of all HIV cases in the United States, and suggest that socioeconomic disparities among this population may place them at a higher risk for infection (Essien, 2005).

Women face many barriers to sexual behavior change, and according to an article by Sikkema (2000), “impoverished women in inner-city communities experience competing life stressors related to social disadvantage, and they are often in relationships with high-risk men” (p 62). Single mothers living in low-income neighborhoods account for 45% of the US population, and account for 28% the nation’s poverty (Bureau, 2002; Bureau, 2007). Social stressors such as unemployment can lead many single mothers to seek work in prostitution, where there is limited bargaining power for condom usage and unknown risk behavior (e.g. IDU) of the sexual partner (Heffernan, 2002). The CDC has also found correlations among race, sexual practices and drug use for women. According to the report, black women tend to have a higher number of sexual partners than white and Hispanic women, and their positive HIV status has been closely correlated to sexual partners who inject drugs (CDC, 2006).

2.1.2 Social stigmas and stereotypes

Stigmas associated with homosexuality and stereotypes about gender roles are also important factors that contribute to the increase in HIV risk and deter behavior change in black, low-income communities. Despite the lingering notion that HIV is considered a “gay white man’s disease” in this country, increases in HIV/AIDS infections are higher in low-income young blacks, with a disproportionate number being female (CDC, 2008b). Despite statistics disproving the association of HIV with homosexuality, such stigmas still persist.

Studies exploring HIV stigmas have identified that the attitudes individuals exhibit towards people with AIDS are reflected through different experiences of the AIDS epidemic (Capitanio, 1999). In American culture, ideas about homosexuality are associated with powerlessness and perceived weakness and are widely unaccepted and unacceptable in many black households and communities. For black males living in low-income communities, homophobia, or the irrational fear of gay men, is a central organizing principle of the cultural definition of manhood (Kimmel, 1994). Homophobic men exaggerate the traditional rules that convey manliness and being “a man among men, so as not to be perceived as gay, a sissy, or weak (Kimmel, 1994). In black communities, homophobia and intolerance keep gay and bisexual people “in the closet,” living dual lives by outwardly living as a heterosexual and keeping homosexual relationships on “the down low” (Beard, 2005). This duality creates difficulty in determining whether these “down low” black males are a “bridge” for HIV transmission to black communities, and for tailoring relevant public health messages, education and prevention programs specifically for these populations.

Gender stereotypes are also associated with risky behavior with residents of low-income strata. Kerrigan (2007) has found that male gender ideologies such as toughness and sexual prowess are often overtly emphasized when men are unable “to fulfill their primary gender role as economic provider” (p 172). Failing to meet one’s financial responsibilities or obligations can have a negative effect on self-worth, especially for black males in low-income communities, which may also lead to an increase in risky sexual practices (Beard, 2005). Exaggerations of traditional masculinity rules, including sexual predation of women, are compensation mechanisms that validate masculinity for

those who feel the sense of financial loss and power failure in the world of men (Kimmel, 1994). Such perceived feelings of inadequacy and humiliation lead to seeking low-cost distractions, such as drugs or alcohol, which often lead to substance abuse or risky sexual behavior and multiple partner conquests.

Black women also deal with stereotyped gender roles, which focus on emotional strength and caretaking (Sanders-Phillips, 2002). As Dr. Sanders-Phillips (2002) has observed,

the most common routes of exposure to HIV for women of color are intravenously injected drug use and prostitution ... women who feel powerless in their relationships are less likely to use protection against HIV exposure. These perceptions of powerlessness are the result of a broad array of experiences that may include secondary status, exposure to violence, restricted economic opportunities, and experiences of racism and oppression (p. 151).

In turn, such stereotyped gender roles, in combination with low self-efficacy and powerlessness, may be related to black women seeking intimacy while allowing risky sexual behavior (Kerrigan, 2007). This combination of powerlessness over her economic situation and the longing to escape from the pressures of everyday life can lead to indulgences in drugs and short-term risky sexual relationships. Women often view sex as an intimate interaction and in an effort to build trust, forgo the use of condoms.

2.1.3 Limited access to health care education and prevention

Limited access to health care education and lack of culturally tailored prevention in black, low-income communities has prevented many of these populations from gaining knowledge to reduce their risk of HIV. Limited access to healthcare services, testing and related education may be key factors in higher AIDS diagnosis rates for black women,

which are 23 times higher than for white women (CDC, 2005a). According to a recent study (CDC, 2005a) by the National HIV Behavioral Surveillance System, 46% of the black participants tested HIV-positive, and of those participating, 67% were unaware of their infection. Additionally, the CDC HIV Surveillance Report (2003) stated that 34% of black women were infected with HIV through sexual intercourse with an HIV-infected person unaware of his status (Beard, 2005). For those who do not know their HIV status, neglecting to find out has been determined to have significant clinical implications about treatment regimens that would be more effective if administered earlier on in the disease process (CDC, 2005a).

Based on a study by Morgan (1985), lower socio-economic groups and minorities tend to make less use of preventative health services and overall, are uneducated about proper health care behaviors. Another study measured the presence of adherence to treatment regimens among black low income, HIV seropositive patients. The results confirmed that these populations were more likely to miss scheduled appointments and were not consistently accessing medical care (Israelski, 2001). These two studies connected this to the concept that these populations have not received culturally appropriate education about HIV status. The prevalent notion that people should visit the doctor only when they are sick is a cultural yet costly misunderstanding. Individuals suffering from HIV may not attend clinics until the symptoms are severe, with the potential for further spread within his/her sexual network (Israelski, 2001; Morgan, 1985).

The misunderstanding that people should only visit the doctor when sick also relates to the fact that disparities in income and health insurance coverage prevent lower

income black populations from receiving ambulatory care services (Weinick, 2000). One study (Aruffo, 1991) performed by the Baylor College of Medicine surveyed low-income minority populations about their access to AIDS knowledge. Results from this survey concluded that as many as 70% of all people below 150% of poverty level do not use the primary care facilities. Underutilization of these services may be attributed to a lack of health insurance and inadequate access to the free medical care that is provided (Heffernan, 2002). Private health insurance coverage alone is twice as high in white populations than black, and with blacks being among the highest in the nation in poverty, health insurance coverage is not easily accessible (CDC, 2005a; CDC, 2006). In addition, the allocation of health service resources is variable, and with many clinics outside low socioeconomic residential areas, patients have to travel elsewhere for low cost or free treatment. This inconvenience delays medical attention and prolongs infection (Heffernan, 2002).

2.2. PREVENTION PROGRAM EVALUATION

The United States continues to experience an increase in treatment of individuals living with HIV, with stable diagnosis trends. Given the fact that there is no effective vaccine for HIV and antiretroviral treatment (e.g. HAART) is often costly and does not reduce illness, treatment practices alone are not sufficient to overcome the challenges of this epidemic. Behavioral prevention efforts are also needed. The Institute of Medicine has even called for evidence-based behavioral interventions that focus on HIV prevention as a mechanism for averting new infections (Lyles, 2007). Prior to 1989, clinic-based

interventions for HIV positive individuals focused on counseling and testing only; however programs such as the AIDS Community Demonstration Project (ACDP) determined that behavioral interventions for at-risk populations, including discussion sessions on condom use and available condom types, are also critical for effective prevention (Higgins, 1996). In minority populations, the proportion of contracting AIDS is substantial, thus highlighting the importance of AIDS prevention and education (Aruffo, 1991). This section discusses the applicability of syndemics as a study design mediator associated with behavior change programs. Literature on syndemics involving HIV/AIDS and drug abuse is then evaluated to determine “best practices” characteristics for effective prevention programs.

2.2.1 Syndemics

Syndemics is used to describe “mutually interacting epidemics that are functioning to make each other worse” (Stall, p.251). The overall health profile of a population is significantly lowered through syndemic reinforcements, more than each epidemic separately (Stall, 2007). Therefore, incorporating aspects of syndemics such as STD risk, pregnancy, and drug use would facilitate the effective identification and successful access to populations that would be unlikely to be reached through HIV programs alone. Incorporating this “best practice” concept into intervention programs requires an understanding of these relationships through formative research in order to elucidate processes of “social influence and the social context of risk behavior” (Latkin, 1995, p 2).

Several programs have been tailored to address syndemic relationships for disease prevention. One major study (Terry, 1999) that has been established as an intervention focusing on tailored behavioral changes is the Women and Infants Demonstration Project (WIDP). This project translated social science theoretical models into public health practice in developing tailored outreach services to women at risk of contracting and transmitting HIV. According to the authors of this study, an effective approach used by WIDP for HIV prevention was formulated by the epidemics of sexually transmitted diseases and prevention of unintended pregnancy. By taking this approach, participants in this project were more willing to accept and find relevance in the projects materials and messages. This technique of approaching HIV prevention was also helpful in reducing any potential stigmas that could possibly be linked to HIV/AIDS. In addition, partnerships between local institutions, organizations and women living in the community were established to provide prospects for collaborations concerning other community health issues (Terry, 1999)

The Young Women's Survey (YWS) (Ruiz, 2000) was conducted among women residing in low-income neighborhoods in northern California. This study addressed the prevalence of HIV in conjunction with other sexually transmitted diseases (STD) associated with sexual and drug-using behavior among women. This study yielded a participation rate of more than 70%, and screened 1,300-2,500 individuals for HIV and other STDs. Results from this study determined that other sexually transmitted diseases (e.g. syphilis, gonorrhea, Chlamydia) were causally associated with HIV transmission providing further evidence that these concurrent issues require continued prevention interventions.

A similar approach of linking co-morbid factors, such as HIV and drug use is addressed in an analysis by Latkin (1995). Latkin explored HIV related behaviors among urban drug users with personal social network methodology. His results reveal that social networks among drug users (mainly IDUs) are an effective tool for understanding the social framework of HIV/AIDS risk behaviors (C. Latkin, 1995). The formative research detailed by the AIDS Community Demonstration Project also utilized a similar approach in linking injecting drug users, females exchanging sex for drugs or other services, runaways and MSMs who do not self identify as homosexual to HIV intervention programs. This approach proved effective in finding subgroups or sectors that have not been previously reached by their services, or re-exploring the well-established communities they already serve (Higgins, 1996).

2.2.2 Best-evidence intervention characteristics

According to a review on the best-evidence interventions from 2000-2004, author Lyles (2007) concludes that study design characteristics for best-evidence interventions contribute to the overall efficacy of behavioral program interventions. This conclusion was based on the evaluation of behavioral interventions determined to have “sufficient quality and strength of evidence to infer a significant effect on reducing HIV risk” (Lyles, 2007, p. 134). Several behavioral intervention programs focusing on the syndemics of HIV and drug abuse are driven by behavioral change theories (Kelly, 2000; Lyles, 2007). Incorporating behavioral-based theory as a characteristic of the program design is effective in mediating the steps necessary for problem-solving about behavior change,

self-management risk reduction skills, and reinforcement of participant behavior change efforts (Kelly, 2000). Another intervention characteristic is intervention setting, such as the research sites, in the community or at health care and HIV clinics. Reinforcement of behavior change by providing “booster sessions” after completing the intervention is highly effective for long-term behavior change ("HIV Prevention Strategies for Communities of Color", 2002; Kelly, 2000; Lyles, 2007). In addition, the overall content of the intervention, whether including practical applications of skill building (e.g. condom use and condom negotiation), decision making, or problem solving, has also been reported as being the “best practice” techniques for HIV and/or drug abuse behavior change (Foundation, 2008; Kelly, 2000; Lyles, 2007). This section provides several examples of “best practice” characteristics for interventions addressing the co-morbidity of HIV and substance abuse.

Projects such as the Self-Help in Eliminating Life-threatening Diseases (SHIELD) used several social science theories involving active learning, cognitive consistency, and social identity, influence and cognition to engage low-income, black drug users in practicing healthier choice behaviors. The intervention settings from this 10-session program included the community-based research clinic and participant-delivered outreach within the community. This interactive intervention involved interpersonal skill building that included setting personal goals, role playing, demonstrations and group discussions. Participants were also empowered to conduct community HIV outreach and risk reduction among their sex and drug partners. Results from this study, based on comparisons from baseline to the six-month follow sessions, indicated a significant reduction in injection drug use frequency ($p < .05$), and participants were more likely to

stop injecting drugs than those in the control group. Additionally, results among sexually active drug users indicated that those receiving the SHIELD intervention reported a greater increase in condom use with casual sex partners (C. A. Latkin, Sherman, S., Knowlton, A., 2003).

The Women's Co-Op study focused on behavior change in black female drug users not in treatment, utilizing empowerment theory and African American feminism to incorporate gender-and culture-specific skills training. Participants were also trained on condom use and syringe cleaning. In addition, individual HIV counseling and problem solving skills are characteristics of this program that increase female sense of power and ability to cope with life stressors. This six-week training session, which included 1.5 and 4.5 month follow-up sessions post-intervention, was set in church basements and residential buildings in the target inner-city neighborhoods. Findings from the Co-Op revealed that the "best practice" study characteristics resulted in a decrease of unprotected sex with the women's partners ($p=.03$), as well as significant decreases in sex trading and drug use at 1.5 month post-intervention follow-up (Wechsberg, 2004).

The Enhanced Negotiation intervention focused on the daily lives of black, sexually active female drug users and how to utilize gender and culturally tailored HIV risk reduction strategies for behavior change. This program encompassed the theory of gender and power, planned behavior, reasoned actions, social cognitive theory and the Transtheoretical model of change. The research site was located at the Health Intervention Project (HIP), a resource-rich center for these target populations. The intervention sessions offered education and practical applications for correct condom use, safer intravenous drug injection and skills that build communication, negotiation and

assertiveness. Drug behaviors and sexual risk behaviors were measured at six-month follow-up, which also provided a risk reduction booster about HIV and drug use. Overall findings of this study indicated a reduction in sex trading for money or drugs ($p < .01$) as well as a decrease in the number of times they had sex with a paying partner. Results also reported a significant increase in condom use with steady partners ($p < .001$) over a period of six months (Sterk, 2003).

These are a few examples of effective HIV and drug use programs acceptable for behavior change (Lyles, 2007). Overall efficacy of behavioral change programs is indicated by whether or not there is substantial evidence to infer a reduction in HIV risk. However, there is no way of knowing to what extent an increase in condom use or a decrease in the prevalence of sexual partners and drug use will impact transmissibility of HIV (Fishbein, 2000). Despite this limited understanding, behavioral prevention programs are an important component in providing for the public health needs of all people, especially persons at high risk for infection and substance dependency. In Allegheny County, Pennsylvania, organizations such as the PATF have implemented behavioral prevention intervention programs for populations at risk for co-occurrence of HIV and substance abuse. One of these is the Partnership for Intervention and Empowerment (PIE).

2.3 PARTNERSHIP FOR INTERVENTION AND EMPOWERMENT (PIE)

The goal of PIE is to make prevention education and interventions priorities at both the community and client levels. A secondary goal is to strengthen formal collaborations of the tenant communities with outside partners both within their own community as well as throughout the greater Pittsburgh area. PIE has a number of community-level and client-level objectives:

Community Level Objectives:

1. To develop, coordinate, and institute prevention intervention specific to substance abuse or HIV infection in three target communities; and
2. To develop an Effective Prevention Intervention (EPI) to build community partnership that address substance abuse and HIV and emerging needs.

Client Level Objectives:

1. To provide one prevention intervention specific to substance abuse and HIV to 70% of the adults living in our target communities;
2. To provide HIV rapid testing to 500 adult residents of the target communities;
3. To increase the knowledge of 66% of participants of prevention interventions specific to substance abuse and HIV;
4. To provide access to appropriate clinical care for 50% of those who test positive for HIV infections; and
5. To provide written information regarding risk reduction for substance abuse and HIV infections to 100% of the households

Achieving these will provide PIE with an effective voice and a sense of solidarity in its approach to dealing with community concerns.

The PIE project design has three stages in order to better plan and implement the education and intervention activities. The first component is comprised of a community needs assessment, with key members of the communities providing insight in order to

help define the needs of their community as well as targeting sub-populations that would benefit most from these interventions (e.g. women, senior citizens, re-entry populations). The next stage is implementing community-based prevention interventions in the target communities with assistance from key community stakeholders. The final stage is a comprehensive evaluation to measure effectiveness of the program as well as to make any necessary improvements to the intervention.

2.3.1 PIE needs assessment

The populations chosen to participate in PIE were determined by the statewide HIV Prevention Planning Committee; however, demographic factors played an underlying role, as only black, low-income communities were in contention for participation. The Pittsburgh communities that met the characteristics included Arlington Heights (n=150), Garfield Heights (n=326) and St. Clair Village (n=316) [n=number of households within the community]. According to the Housing Authority of the City of Pittsburgh in Allegheny County, 97% of the residents in these communities described themselves as minority tenants, 84% were in single-headed households and of those, 87% were headed by women. In addition, these neighborhoods have strong tenant councils, common congregation areas (such as schools and large churches), and significant lack of health related services. Key community members, local stakeholders and resident volunteers provided insight through focus groups on the needs of each of the chosen target communities.

2.3.2 PIE evidence based prevention intervention

The intervention consists of two sessions, one for each topic (HIV, substance abuse) per community. Community members meet once a week to listen to a different intervention specialist trained on one of the program topics. Their messages pertain to transmission modes for HIV infection, symptoms of infection, effective tips on how to protect oneself from infection, and signs of substance and drug abuse. During these sessions, participants can engage in dialogue or raise any questions they may have relevant to the program topic. Near the end of the session, the intervention specialist administers a brief quiz to test participants on newly gained knowledge, and then the answers are discussed openly with the group. The PIE project provides dinner and a \$10 Giant Eagle gift card for each attendee over the age of 18 for each intervention session completed.

In addition to the intervention sessions, rapid HIV testing is also provided to the communities at no cost. The testing takes place during each “community day” celebration and potluck during the summer months. Testing is performed at this time in order to provide a free service opportunity for all community members, not just those who participate in the interventions.

2.3.3 PIE comprehensive evaluation

PIE is evaluated through surveys administered to participants three times throughout the course of the intervention. Evaluation of the program is a necessary component to monitor and/or sustain effectiveness as well as make improvements to the intervention program. These surveys evaluate individuals' knowledge about sexual behavior, family relationships, drug and alcohol use, common infections, individual health care and depression. Each survey consists of 144 questions and takes about one hour to complete. The first survey occurs at baseline and must be completed 30 days prior to active involvement in PIE sessions. Community members receive a \$20 Giant Eagle gift card upon completion. At the end of the PIE intervention series (completion of all three sessions), members are asked to complete a 10-day follow-up survey. Another \$20 Giant Eagle gift card is awarded upon completion. The final survey is administered six months after completing the 10-day follow-up survey. Participants then receive an additional \$50 Giant Eagle gift card. Interventions and survey evaluations are ongoing for at least five years in the same target communities.

3.0. EVALUATION OF PIE

This section evaluates the strengths and weaknesses of PIE during the first year of implementation into the target communities. Determining an effective implementation was based on personal observation and interactions of the PIE intervention sessions during a practicum experience undertaken in 2007. These observations were then compared to the “best practices” characteristics of evidence-based behavioral interventions. Since PIE is currently in its third year, overall program efficacy cannot be measured; however, by comparing the characteristics of study design of PIE with national standards for “best practice” intervention programs, inferences on the success of the study can be made.

3.1 EVALUATION OF NEEDS ASSESSMENT

This section provides a description of the strengths and weaknesses of PIE’s formative research process for identifying the target communities and addressing their needs. According to Hodges (2005), needs assessments are imperative in determining the health status, health issues, and possible “antecedents to these problems, and corresponding programming needs” (p. 2). Conducting initial research to understand

social stigmas, knowledge related to HIV, and social dynamics of communities allows intervention program designers to re-explore the areas they serve, address barriers that would deter the success of the program and help determine the acceptability of the intervention methods (Higgins, 1996; Hodges, 2005). As demonstrated by the AIDS Community Demonstration Project (ACDP), formative research can be utilized to assess members of “hard to reach” at-risk populations that include IDU and those who engage in unsafe sexual practices with or without IDU partners (Higgins, 1996). Additionally, assessing social networks through formative research has been helpful in order to explore patterns of behavioral interactions among people, especially to determine certain stigmas and perceived relationships of individuals (Higgins, 1996).

Based on the mission of PIE, one of the characteristics used to identify communities was whether HIV and substance abuse are considered substantial problems. Substance abuse data are relevant to the study of HIV/AIDS prevention planning strategies due to the increased risk of contracting the disease among injection drug users (IDU), who often share syringes and needles. The CDC (2002) indicated that in 2000, IDU-associated AIDS accounted for 26% of all AIDS cases among black adults. In fact, trends within the state of Pennsylvania have indicated that heroin abuse has surpassed cocaine use as the greatest drug threat, leading to an increase in hepatitis and HIV infection contracted from dirty needles (Office of National Drug Control Policy, 2004). Based on the Allegheny County Community Profile, the Allegheny County Department of Human Services does provide drug and alcohol services to the three target communities (ACDHS, 2009). However, as of January 2009, only 2% of the Garfield Heights and St. Clair Village community members had utilized those services. The

October 2008 data indicated that only 4.5% of those in Arlington Heights had used these services (ACDHS, 2009).

According to national and local data and statistics about the under-utilization of services in the target communities, drug and substance abuse are problems in the target communities. Identifying the syndemics of HIV and substance abuse in the three target communities is a strongpoint of the PIE project in that it addresses other pathways for contracting HIV besides sexual intercourse. In addition, by pairing drug abuse with interventions on HIV, there is potential to reach individuals that would normally be deterred because of stigma associated with HIV in these communities.

Once the communities were chosen, the PIE project team prepared a needs assessment protocol in March 2006, which included a pre-assessment phase and focus groups. The focus groups were comprised of residents from each of the target communities who discussed their personal knowledge of substance abuse and HIV, and (perceived) related barriers to obtaining HIV testing. Participants shared their past experiences with treatment and prevention interventions and psychosocial influences such as the impact of cultural factors on their ability to access services. Focus groups targeting PIE stakeholders with the potential to contribute to capacity building within the target communities were also implemented.

However, while establishing an understanding of the level of HIV and substance abuse knowledge in the three communities is an important measure for program efficacy, a major oversight of PIE was the failure to ask members of the focus group 1) if community leadership engages in earnest relationships with other members of the community; 2) if community members are willing to actively participate in this program

and 3) how the intervention should be structured and what the program should cover. During the program intervention, observations were made that answered these queries, retrospectively, and based on personal observation, not all of the communities participating may have been the best choice. If these questions had been addressed in the needs assessment focus group, the result of the chosen communities may have been different.

Through observations and informal discussions, residents of St. Clair Village expressed their strong desire to educate themselves and others about HIV transmission and infection and substance abuse dependency. All of the residents present at the sessions were black, mostly with children present, and are members of this subsidized housing community. Residents also illustrated strong community ties based on the ease and informality of the sessions, since most of the participants introduced themselves as being related, stating they were his/her cousin/niece/grandparent, or knew someone who was related to them. The residents of St. Clair Village were concerned about the problems of HIV and drug abuse in their community, and how, if left untreated, the effects of these social problems would affect their children and grandchildren who are being raised in their communities. Many of the women had also noticed an increase in youth violence and drug dealing and raised concern that St. Clair Village would turn into a “crack-house” and would not be a safe environment for families.

The residents who attended sessions in Garfield Heights also voiced issues about HIV and substance abuse at the sessions as well as exhibiting strong community ties, similar to residents in St. Clair Village. Especially concerned were mothers and grandmothers who expressed their angst about the limited number of after-school

programs and safe playground facilities for young children. With over 40% of the households in Garfield Heights headed by single mothers (ACDHS, 2009), many households cannot afford after-school care and children often get left in the hands of a family member or must tend to themselves for most of the day (ACDHS, 2009). Limited programs and other safe outlets for children (especially single-parent children) is one of the most talked-about concerns in this community. Residents perceive that without positive alternatives for their children, the propensity for experimentation with sex and drugs increases.

While the residents of Arlington Heights also presented concerns validating the need for HIV and substance abuse awareness programs, many individuals felt that HIV education does not pertain to them. In contrast to St. Clair Village and Garfield Heights, most of the participants at the Arlington Heights intervention sessions were older and did not convey the bond of friendship and familial ties with one another. Over 55% of the community was out of the workforce, either through retirement or from a disability, and many were not as worried about HIV infection because they perceive it as a “young person’s disease.” Additionally, several of the tenants were not as concerned about infection because they were not as sexually active as they had been 10 to 15 years ago. Many of the residents were confident that they understood how HIV was transmitted and understood the consequences of substance abuse dependency. Over 20% of the inhabitants in the neighborhood have a bachelor’s degree or higher (ACDHS, 2009), and higher education levels have also been found to predict and increase in AIDS knowledge (Aruffo, 1991).

3.2 EVALUATION OF STUDY DESIGN

Characteristics of a study design have been proven to contribute to the overall efficacy of behavioral interventions (Lyles, 2007). This section evaluates specific characteristics of the PIE program design and examine if components of the study are contributable to the potential success of the program based on observation of acceptance and participant engagement.

A major component of the PIE study design was to include an advisory council of “gatekeepers” within each community to provide insight and relevant feedback about the needs within their community. The Community Advisory Council was responsible for participant recruitment as well as providing opinions about accessible community facilities for workshops, testing sites, surveys and other resources. While having an established gateway into the community is a strong program design component, there was an issue of recruitment imbalance. The PIE Project is a *volunteer* prevention education program, and many of the residents recruited by the CAC were either friends of CAC members and/or had an established camaraderie and were already active in the community. Therefore, CAC members and their friends in all three communities actively participated and seemed engaged in the program. This may exclude sub-populations within these communities in need of public health services (e.g. indigent and re-entry populations).

A second strength of PIE was the location of the program intervention. Research of “best practice” intervention characteristics has reported research sites as a factor for effective programs. Effective intervention settings include community sites and health care or HIV clinics. The facilities chosen for PIE were locations easily accessible on foot within the communities. While the CAC provided insight as to the facilities in the community (within walking distance or close to bus routes), aesthetics have hindered residents from engaging entirely in the sessions. Many of the interventions were conducted in a space that did not provide air conditioning for the participants. The actual deployment of the PIE Project began in the summer of 2007, and the limited cool air circulation may have been a potential distraction for participants. The intervention in Garfield Heights in particular was housed in a church without air conditioning, and for women with children or who were pregnant, such heat was unbearable.

In addition to the lack of A/C, daycare services were not initially provided during the interventions at St. Clair Village and Garfield Heights. Female participants brought their children and grandchildren to the sessions, causing distractions and censoring of certain education material. However, this barrier was remedied in the interventions presented later in the summer (Arlington Heights), as funds were re-allocated to provide assistance with childcare while parents attended the prevention intervention sessions. This was not initially perceived as a significant issue in the study design; however, since in these communities the majority of black, low-income households are run by single mothers, accommodating these individuals is critical. Within the PIE communities of St. Clair Village and Garfield Heights, 68% and 40% (respectively) of the households are run by single mothers, and of those, 56% and 26% (respectively) of the households

contain children under age 18. Single parent households represent 39% of the population in Arlington Heights, and all 39% of the households are inhabited by children under the age of 18 (ACDHS, 2009)

While there were imperfections with certain aspects of the study design, behavioral programs do not occur in a vacuum and even the best design does not always achieve the desired effect. However, two components that have been nationally recognized as mediators for effective behavioral programs are not included as study design components for the PIE program; including practical skill building activities and incorporating follow-up sessions for program adherence.

The activities of the HIV and substance abuse intervention sessions consist of the dissemination of health promotion messages by an interventionist specifically trained in HIV or substance abuse education. During these sessions, participants can engage in dialogue or raise any questions they may have relevant to the program topic, yet practical skills, such as condom negotiation, correct application of condoms and techniques for disinfecting needles, are never shown. Several studies have determined that correct and consistent condom use is one of the easiest and most recognized forms of risk reduction practices for HIV (Fishbein, 2000; Kelly, 2000; King, 2008; Lauby, 2000; Lyles, 2007; Sikkema, 2000). In addition, risk reduction exercises and practical application of these skills has been reported as being “best practice” techniques for HIV and/or drug abuse behavior change (Foundation, 2008; Kelly, 2000; Lyles, 2007). While it was observed that the PIE project interventionists encouraged informal dialogue during the sessions, the lack in session structure limited even informal role play or skill building exercises.

The final component reported to support effective behavioral intervention programs is the incorporation of follow-up or “booster” sessions, which are essential to reinforce behavior change, especially long-term behavior change (“HIV Prevention Strategies for Communities of Color”, 2002). Engrained sexual habits are resistant to change, and positive changes observed over short periods of time might disappear as more time passes. Providing follow-up sessions as a critical component to behavioral program design has been proven as a successful tool for sustaining long-term behavior change (“HIV Prevention Strategies for Communities of Color”, 2002; Kelly, 2000; Lyles, 2007). The PIE project does provide follow-up evaluation surveys to measure behavioral change and increased knowledge of HIV transmission and substance abuse, yet does not provide refresher sessions.

PIE also offers HIV testing during each “community day” celebration and potluck during the summer months. However, there are limited resources available for participants who test positive for HIV. Seropositive individuals are instructed to follow up independently with the PATF to receive counseling and to determine treatment options. Instructing HIV positive individuals to follow-up independently is not an adequate technique constructive behavioral change. Since HIV rapid-testing is included in the study design, PIE project coordinators should provide resources to enable treatment and medication services.

4.0 DISCUSSION AND INTERPRETATIONS

Evaluation of the PIE study design characteristics provides insight as to what factors contribute to the overall efficacy of the program. While it is not feasible to evaluate program efficacy based on personal observation of the study design in the first year, inferences can be made based on recognized “best practices” study design characteristics. Based on personal observation, there were many strengths and weaknesses associated with what was included in the program design, and what was lacking. Taking into account that observations were conducted during the first year of PIE implementation into the communities, conclusions of potential success were drawn based on observation of whether participants seemed engaged and accepting of the program. The communities of St. Clair Village and Garfield Heights expressed significant concerns about HIV education and the prevention of substance abuse through informal discussions during the intervention sessions. Residents of Arlington Heights were considered to be the least probable to effectively utilize the intervention education tools provided by PIE. There was less of a concern for HIV education and testing, since most residents had already expressed a general understanding of transmission and openly discussed that their sexual inactivity harbored less of a risk.

One of the most important components lacking from PIE’s study design was that there was no follow-up for individuals testing positive for HIV. Determining diagnosis of HIV is only the first step; providing resources, counseling, treatment and medication options are vital for reducing the morbidity of this disease. Testing alone is not adequate,

and of all the weaknesses from the PIE program design, lack of follow-up reflects negatively on the program and is the highest impact for HIV positive individuals.

There is a strong need for behavioral program interventions to reduce the incidence of HIV and address issues of substance dependency. Incorporating study design elements, such as a comprehensive needs assessment, skill building intervention activities and follow-up sessions, may attribute to the overall success of reducing the risk for these diseases. However, behavior change is a lengthy process. Findings from the WIDP suggest that while effective condom use was not evident from one year to the other, positive intervention effects did become discernable more than two years after the implementation of the program (Lauby, 2000). While efficacy of an on-going program, such as PIE, may be difficult to measure in the short-term and mid-term evaluations, evaluating components that are shown to contribute to effectiveness can lead to further interpretations of the most effective methods to conduct programs.

A major limitation of this evaluation is having no access to the survey data that would quantifiably determine long-term community retention of prevention education. In addition, since personal observation of PIE concluded at the end of the summer 2007, there is no way to measure the long-term capacity and community engagement of the three target communities. Community capacity building and engagement were based on the personal observation and interactive discussions during the summer 2007 practicum experience.

5.0 RECOMMENDATIONS AND CONCLUSION

Based on the evaluation the PIE project, several recommendations can be made. Incorporating more skill building and practical application of risk reduction tasks would enhance subject retention and engage in active participation. Role-playing around condom negotiation and hands-on instructions for cleaning IDU needles and correct condom use have been found to increase retention of these risk reduction skills (Lyles, 2007), and are recommended for inclusion in the intervention sessions of PIE. Three at-risk communities have been assessed to participate in PIE. In addition, enhancing educational outreach efforts to harder to reach sub-populations, such as indigent populations and criminal offenders re-entering these communities, is also recommended. For instance, criminal offenders leaving jails and prisons have histories of substance abuse and are in need of public health (HIV substance abuse) services (Mumola, 1999). In addition, it is imperative to sustain existing outreach efforts and increase community capacity within these programs, such as PIE, by maintaining partnerships among community leaders, local residents and community partnerships within Allegheny County

The PIE project is a relevant public health initiative with the potential for positive outcomes in Allegheny County. Continual development of the PIE program and initiating similar programs in other minority subsidized housing developments, education, awareness, and prevention information would reach larger (and possibly more diverse) populations. Future public health goals include identifying program planning strategies that would provide information and/or access to appropriate clinical care for individuals who test positive for HIV/AIDS. Developing strategies to counteract the

disparity in access to care is paramount in addressing the plight of the uninsured and under-insured. Too often local organizations offer free public screening or testing but have no funding or clinical mechanism in place to provide expensive treatment therapies for patients who may require them. Once diagnosed, the marginalized of our communities tend to fall through the cracks of our health care system.

In addition, expanding HIV testing services to larger areas around Allegheny County would assist the ACHD in determining HIV status in the areas by generating more in-depth report of individuals who tested positive for HIV. This report would also contribute to a more comprehensive identification of communities specifically in need of HIV-related services. On a state-wide level, reported findings may assist the Pennsylvania Prevention Project (PPP), a project that provides assistance to the Pennsylvania Department of Health and to community based agencies about HIV prevention planning, in assessing and prioritizing the short- and long-term resources to provide necessary prevention services in target communities.

In conclusion, evaluating the strengths and weaknesses of a program design provides insight into factors for a successful and effective behavioral intervention program. Incorporating as many “best practice” factors as feasible into the study design of behavioral interventions would greatly enhance the applicability of an intervention program in specific communities. As demonstrated by the evaluation of the PIE project, the study design can affect how communities are reached, who receives the intervention messages and the sustainability of a program within these communities. Behavior change is a difficult and often time consuming goal for program interventions, but evaluating

study design techniques for what works and what does not is vital for continued improvements of potential risky health practices.

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